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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/598,680 | 06/21/2000 | Jeffrey Allen Green | 0933 | 7410 |

7590 08/02/2004
Blakely Sokoloff Taylor & Zafman
12400 Wilshire Boulevard
Seventh Floor
Los Angeles, CA 90025-1030

EXAMINER

SMITH, SHEILA B

| ART UNIT | PAPER NUMBER |
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2681

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/598,680

Applicant(s)

GREEN ET AL.

Examiner

Sheila B. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6, 7 and 11 is/are rejected.
- 7) ☐ Claim(s) 2-5 and 8-10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 18.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1,6,7,11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (U. S. Patent Number 6,523,233) in view of Lemson (U. S. Patent Number 5,678,198).

Regarding claim 1, Wang et al. discloses essentially all the claimed invention as set forth in the instant application, further Wang et al. discloses a method and apparatus for telephone network impairment detection and compensation in signal transmission between modems, additionally, Wang et al. further discloses a communications system including a first modem operatively connected to a second modem via a communications network comprising digital trunks with possible digital impairments of repetitive nature with a repetition frame consisting of one or more time slots and analog loops, the first modem performing a method of compensating for distortion present in signals received from said second modem (which reads on column 3 lines 26-38), said method for compensating comprising the steps of: first, preprocessing to minimize effect of impairments other than distortion, so as to derive best estimates x' of the received- values that would correspond to a set of transmit values y (which reads on column 3 lines 39-46) second, deriving distortion based constant I from x' (which reads on column 3 lines 49-51) third, removing the distortion component from the received estimates

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to derive a distortion removed new estimate x'' in accordance with the equation: $x'' = x' - I(b y)$ (which reads on column 5 lines 50-55) where b is a system constant (which reads on column 5 lines 60-61). Wang et al. does not teach (a) the specific equations for deriving estimates of received values and for deriving distortion based constant and the removed new estimate, and the system constant; and (b) intermodulation distortion. However Wang et al. teaches computing total telephone network impairment as disclosed above, and modifying constants and/or variables of a known function to achieve an optimum relationship requires routine skill in the art.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the computing total telephone network impairment of Wang et al. to find an optimum relationship of the variables, requiring routine skill in the art, so as to provide an enhanced network impairment detection system.

In the same field of endeavor Lemson discloses a system for controlling signal level at both ends of a transmission link, based upon a detected value, In addition Lemson discloses the use of intermodulation distortion as disclosed in column 4 lines 30-35.

Therefore, it would have been obvious to one of ordinary skill in the art the time the invention was made to modify Wang et al. with intermodulation distortion for the purpose of minimizing the instantaneous signal amplitude excursion.

Regarding claims 6,7, Wang et al. discloses mu-law or A-law encoding is used, the preprocessed receive values x' , the distortion removed receive values x'' , and the transmit values y are indexed using Ucode in ascending magnitudes (which reads on column 2 lines 1-2). However Wang et al. fails to specifically disclose intermodulation distortion.

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In the same field of endeavor Lemson discloses a system for controlling signal level at both ends of a transmission link, based upon a detected value, In addition Lemson discloses the use of intermodulation distortion as disclosed in column 4 lines 30-35.

Therefore, it would have been obvious to one of ordinary skill in the art the time the invention was made to modify Wang et al. with intermodulation distortion for the purpose of minimizing the instantaneous signal amplitude excursion.

Regarding 11, Wang et al. discloses setting limits, in the first modem, on constellation levels which the second modem transmits to the first modem, the limits based upon the calculated distortion (which reads on column 2 lines 1-2). However Wang et al. fails to specifically disclose intermodulation distortion.

In the same field of endeavor Lemson discloses a system for controlling signal level at both ends of a transmission link, based upon a detected value, In addition Lemson discloses the use of intermodulation distortion as disclosed in column 4 lines 30-35.

Therefore, it would have been obvious to one of ordinary skill in the art the time the invention was made to modify Wang et al. with intermodulation distortion for the purpose of minimizing the instantaneous signal amplitude excursion.

Allowable Subject Matter

2. Claims 2-5, 8-10 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

3. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

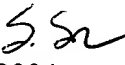
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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheila B. Smith whose telephone number is (703)305-0104. The examiner can normally be reached on Monday-Thursday 6:00 am - 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 703-308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Smith 
July 25, 2004


DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2601